

L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:656721 CAPLUS

DN 139:199086

TI Processes for the purification and production of fluoroalkanes

IN Brandstater, Stephan M.; Cohn, Mitchel; Hedrick, Victoria E.; Iikubo, Yuichi

PA PCBU Services, Inc., USA

SO PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003068716	A1	20030821	WO 2003-US3962	20030211
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	US 2003164283	A1	20030904	US 2002-75560	20020214
	EP 1474370	A1	20041110	EP 2003-707831	20030211
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
PRAI	US 2002-75560	A	20020214		
	WO 2003-US3962	W	20030211		

AB Processes that utilize an olefinic compound, in particular, hexafluoropropene (HFP) or chlorotrifluoroethene (CFC-1113) as extracting agents in the purification of pentafluoroethane (HFC-125) are described. These processes can utilize recovered HFP as a precursor for the production of heptafluoropropane (HFC-227) or other derivs.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:534048 CAPLUS  
 DN 141:89877  
 TI Materials and methods for the conversion of hydrofluorocarbons to  
 fluoromonomers  
 IN Iikubo, Yuichi; Hedrick, Vicki; Brandstadter, Stephen M.; Cohn, Mitchel  
 PA USA  
 SO U.S. Pat. Appl. Publ., 11 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004127757	A1	20040701	US 2002-331821	20021230
	WO 2004060842	A1	20040722	WO 2003-US41851	20031230
	WO 2004060842	C1	20041021		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	US 2002-331821	A2	20021230		

AB Methods and materials for the recovery of valuable hydrofluorocarbons and subsequent conversion to fluoromonomer precursors and fluoromonomers are disclosed. More specifically methods and materials are provided for recovering hydrofluorocarbons such as HFC-227, HFC-236, HFC-245, HFC-125, HFC-134, HFC-143, HFC-152, HFC-32, HFC-23 and their resp. isomers. Processes are provided for converting hydrofluorocarbons such as these to fluoromonomer precursors such as CFC-217, CFC-216, CFC-215, CFC-115, CFC-114, CFC-113, CFC-112, HCFC-22, CFC-12, CFC-13 and their resp. isomers. Materials, methods, and schemes are provided for the conversion of these fluoromonomer precursors to fluoromonomers such as HFP, PFP, TFP, TFE, and VDF. One example demonstrates the conversion of HFC-227 to CFC-217 and finally to hexafluoropropene.

(FILE 'HOME' ENTERED AT 14:56:37 ON 24 JAN 2005)

FILE 'REGISTRY' ENTERED AT 14:57:09 ON 24 JAN 2005

E HFC 227EA  
E 1,1,1,2,3,3,3-HEPTAFLUOROPROPANE  
L1 84 S E3  
L2 1 S 1,1,1,2,3,3,3-HEPTAFLUOROPROPANE/CN  
E 1,1,1,2,2,3,3-HEPTAFLUOROPROPANE  
L3 5 S E3  
L4 1 S 1,1,1,2,2,3,3-HEPTAFLUOROPROPANE/CN

FILE 'CAPLUS, CAOLD' ENTERED AT 15:01:55 ON 24 JAN 2005

L5 877 S L2  
L6 1096 S L1  
L7 221 S L4  
L8 245 S L3  
L9 84 S L5 AND L7  
L10 1 S L9 AND DISTILL?  
L11 1 S L9 AND SEPARAT?  
L12 84 DUP REM L9 (0 DUPLICATES REMOVED)  
L13 17 S L12 AND ?CHLOROFLUORO?  
L14 67 S L12 NOT L13  
L15 1 S L10 NOT L11  
L16 66 S L14 NOT L10  
L17 65 S L16 NOT L11  
L18 0 S L17 AND PURIF?

FILE 'REGISTRY' ENTERED AT 15:09:53 ON 24 JAN 2005

L19 1 S 1-CHLORO-1,1,2,2,3,3,3-HEPTAFLUOROPROPANE/CN  
L20 1 S 2-CHLORO-1,1,1,2,3,3,3-HEPTAFLUOROPROPANE/CN

FILE 'CAPLUS, CAOLD' ENTERED AT 15:12:38 ON 24 JAN 2005

L21 1 S L17 AND L19  
L22 2 S L17 AND L20  
L23 5 S L17 AND ISOMER?  
L24 0 S L17 AND PURIF?  
L25 0 S L17 AND DISTILL?  
L26 0 S L17 AND SEPARAT?  
L27 7 S L17 AND AZEOTROP?  
L28 7 S L27 NOT L23

L19 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2004:534048 CAPLUS  
 DN 141:89877  
 TI Materials and methods for the conversion of hydrofluorocarbons to fluoromonomers  
 IN Iikubo, Yuichi; Hedrick, Vicki; Brandstadter, Stephen M.; Cohn, Mitchell  
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 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004127757	A1	20040701	US 2002-331821	20021230
	WO 2004060842	A1	20040722	WO 2003-US41851	20031230
	WO 2004060842	C1	20041021		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU				
	RW:				
	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	US 2002-331821	A2	20021230		

AB Methods and materials for the recovery of valuable hydrofluorocarbons and subsequent conversion to fluoromonomer precursors and fluoromonomers are disclosed. More specifically methods and materials are provided for recovering hydrofluorocarbons such as HFC-227, HFC-236, HFC-245, HFC-125, HFC-134, HFC-143, HFC-152, HFC-32, HFC-23 and their resp. isomers. Processes are provided for converting hydrofluorocarbons such as these to fluoromonomer precursors such as CFC-217, CFC-216, CFC-215, CFC-115, CFC-114, CFC-113, CFC-112, HCFC-22, CFC-12, CFC-13 and their resp. isomers. Materials, methods, and schemes are provided for the conversion of these fluoromonomer precursors to fluoromonomers such as HFP, PFP, TFP, TFE, and VDF. One example demonstrates the conversion of HFC-227 to CFC-217 and finally to hexafluoropropene.

L19 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:20676 CAPLUS  
 DN 116:20676  
 TI Multistep synthesis of hexafluoropropylene from propane and propylene  
 IN Webster, James Lang; McCann, Elrey Lorne; Bruhnke, Douglas William; Lerou, Jan Joseph; Manogue, William Henry; Manzer, Leo Ernest; Swearingen, Steven Henry; Trofimenko, Swiatoslaw; Bonifaz, Cristobal  
 PA du Pont de Nemours, E. I., and Co., USA  
 SO Eur. Pat. Appl., 33 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 434409	A1	19910626	EP 1990-313951	19901219
	EP 434409	B1	19941012		
	R:				
	DE, FR, GB, IT				
	US 5057634	A	19911015	US 1989-452402	19891219
	CA 2032273	AA	19910620	CA 1990-2032273	19901214
	CA 2032273	C	20020122		

	CA 2298099	C	20020108	CA 1990-2298099	19901214
	JP 04145033	A2	19920519	JP 1990-411690	19901219
	JP 2613683	B2	19970528		
PRAI	US 1989-452402	A	19891219		
	CA 1990-2032273	A3	19901214		

AB Hexafluoropropylene (I) is prepared by (1) chlorofluorination of at least one of propane, propylene, and partially halogenated C3 acyclic hydrocarbons with HF and Cl in the presence of a chlorofluorination catalyst to produce CF<sub>3</sub>CFClCF<sub>3</sub> (II) and other chlorofluorocarbons such as C<sub>3</sub>F<sub>4</sub>Cl<sub>4</sub>, C<sub>3</sub>H<sub>5</sub>Cl<sub>3</sub>, CF<sub>3</sub>CFClCF<sub>2</sub>Cl, CF<sub>3</sub>CCl<sub>2</sub>CF<sub>3</sub>, and CF<sub>3</sub>CCl<sub>2</sub>CCl<sub>3</sub> which are mostly recyclable to the same chlorofluorination step to give II and (2) dehalogenation of II to form I in the presence of a CuO-NiO-Cr<sub>2</sub>O<sub>3</sub>-CaF<sub>2</sub> (and-MoO<sub>3</sub>) catalyst containing at least one of K, Cs, or Rb. In this process there is substantially no perfluoroisobutylene produced as a byproduct which is extremely toxic and is costly to remove and destroy. Thus, Cr<sub>2</sub>O<sub>3</sub>·3H<sub>2</sub>O was charged to an Inconel tubular reactor and treated with a flow of HF at 400° for dehydration and thereto HF 90, Cl 35, and propylene 1.5 mol/h were fed at 440° and 790 kPa to give II 75, C<sub>3</sub>F<sub>6</sub>Cl<sub>2</sub> 7, C<sub>3</sub>F<sub>5</sub>Cl<sub>3</sub> 5, C<sub>3</sub>F<sub>7</sub>H 3, C<sub>3</sub>F<sub>6</sub>ClH 5, C<sub>3</sub>F<sub>8</sub> 2 and C<sub>2</sub>F<sub>5</sub>Cl 2%. A 1:1 (mol) mixture of H and a II feed containing II 79, CF<sub>3</sub>CF<sub>2</sub>CF<sub>2</sub>Cl 17, and CF<sub>3</sub>CCl:CF<sub>2</sub> 0.7% was passed over a catalyst CuO/NiO/Cr<sub>2</sub>O<sub>3</sub>/2.7 CaF<sub>2</sub> containing 7.9 weight% K at 402° to give 97% I with 63% conversion of II.